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MPEG-4 video subjective test procedures and results

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Abstract:

In the recent years, the technical developments in the area of audio-visual communications, notably in video coding, encouraged the emergence of new services which are already changing our everyday life. The convergence of the telecommunications, computer, and TV/film technologies is leading to the intermixture of elements formerly characteristic of each one of these fields, creating new needs and new requirements. Among the most important trends is the need to increase the interaction capabilities between the user and the audio-visual information, notably by considering the scene as a composition of objects—the content—according to a script that describes their spatial and temporal behavior and not just a set of pixels. MPEG-4 is a new audio-visual standard aiming to establish a universal, efficient coding of different forms of audio-visual data, called audio-visual objects. To reach this target, MPEG-4 has called for proposals on techniques that may be instrumental to efficiently represent visual information, allowing simultaneously high degrees of content-based interactivity and error resilience. This paper addresses the conditions under which the proposals to the MPEG-4 first round of video subjective tests have been evaluated. Moreover, the most significative results of these tests are also presented.

Index Terms:

video coding; code standards; telecommunication standards; interactive video; audio coding; audio-visual systems; interactive video; subjective test results; audio-visual communications; video coding; audio-visual standard; audio-visual information; temporal behavior; spatial behavior; telecommunications technology; computer technology; TV/film technology; audio-visual data coding; audio-visual objects; content based interactivity; error resilience; MPEG-4 coding standard; video subjective test procedures

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